TWENTIETH
ANNUAL REPORT
OF THE
MEDICAL OFFICER OF HEALTH
TO THE
URBAN SANITARY AUTHORITY
OF THE
CITY OF WORCESTER.

YEAR 1893.

WORCESTER:
PRINTED BY DEIGHTON AND CO., 53, HIGH STREET.

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The Twentieth Annual Report of the Medical Officer of Health, being for the year 1893.

TO THE URBAN SANITARY AUTHORITY OF THE CITY OF WORCESTER.

Mr. Mayor and Gentlemen,

I have the honour to lay before you my Report of the sanitary condition of the City during the year 1893, also a summary of the action taken to prevent the spread of disease, and an account of the enquiries made as to conditions which may be injurious to health existing in the City.

The population of the City in the middle of 1893 is estimated at 43,480. The natural increase of the population, or the excess of births over deaths, during the year was 408.

The Birth-rate was 28·6 per 1000 living, which is the lowest rate for the City that has been recorded (Table V.), and is 1·8 below the mean rate of the preceding 7 years. The birth-rate for England and Wales in 1893 was 30·8 per 1000 population.

The Death-rate for the year was 19·2, which is lower than the rates of the preceding three years, and 1·7 below the mean rate of the preceding 7 years (Table V.) The death-rate for England and

Wales was also 19·2, and corresponds with the mean rate of the ten years 1883-92.

The Infantile Death-rate (the mortality of infants under one year of age to births registered during the same period) was 166 per 1000; which is 19 per 1000 below the mean rate for the preceding 7 years. The rate for England and Wales was 159.

The Death-rate from the seven principal Zymotic diseases was 2·1, which was ·3 per 1000 higher than the mean rate for the seven preceding years. The Zymotic death-rate for England and Wales was 2·47 per 1000.

Inquests were held by the City Coroner in 62 cases, or 7·6 per cent. of the total deaths registered during the year. Of this number, death was assigned to accidents in 23 cases; to natural causes in 22 cases; and to suicide in 8 cases.

In estimating the death-rate for this year, there has been included for the first time the deaths of the inmates of Powick Asylum who went there from the City. These numbered 11. The deaths of persons dying in the General Infirmary who came from outside the City have been excluded, except in the table filled up for the Local Government Board in which all deaths *registered* in the City are included.

It will be noticed that there are 12 deaths assigned to Epidemic Influenza. This is the fourth winter in succession that this disease has been prevalent in Worcester, but the last epidemic has on the whole been of a milder type than the previous ones.

The Infantile death-rate is fairly satisfactory compared with most former years. It would have been still smaller had it not been for the large number (40) of deaths due to Diarrhœa. This was consequent on the great summer heat, and throughout the kingdom the deaths caused by this disorder were more numerous than in any year since 1880.

The death-rate from the seven principal Zymotic diseases for the year was rather higher than usual (Table V.) The causes of death will be found on Table VI., where it will be seen that in nearly all the diseases the deaths were slightly more in number than the mean of the preceding seven years. Of the total of 92 deaths from these diseases, 45 were in infants under one year and 32 in children between one and five years.

Of the deaths from Measles all but one occurred in the last three months of the year. The death-rate for this disease was ·43 per 1000 living. The deaths from Diphtheria were, as was the case in 1892, much in excess of the mean for the preceding seven years. The death-rate for this disease was ·2 per 1000 living. The deaths from Typhoid Fever were slightly less than the mean of the preceding seven years, and gave a death-rate for this disease of ·2 per 1000 living. During the year 30 deaths were assigned to Cancer, giving a death-rate of ·68 per 1000 living. The deaths from Phthisis numbered 47, giving a death-rate of 1·08. The total deaths from all forms of tubercle numbered 73, giving a death-rate of 1·8 per 1000 living.

In Table III. will be found birth and death-rates for each parish in the City, and in Table IV. an analysis of the deaths occurring in each parish. The deaths occurring in the Workhouse and Hospitals have been apportioned to the parishes from which the persons came.

THE INFECTIOUS DISEASES (NOTIFICATION) ACT.

During the year 494 cases of infectious disease have been notified. As in former years, the notification by the householder is practically a dead letter. Although Scarlet Fever has extensively prevailed there has been no occasion to take any action with respect to the closure of any school, but the exclusion from school of children from the infected houses has been sufficient. The printed rules for preventing the spread of Typhoid Fever, Scarlet Fever, and Diphtheria are sent in all cases where the patient is not at once removed to the Isolation Hospital. The Health Committee instructed me to draw up a form to send to Nurses and Midwives who had been in attendance on cases of Puerperal Fever, warning them of the danger of conveying this fatal disease to others, unless they took precautions to thoroughly disinfect their person and clothing. This will, it is hoped, be an additional safeguard against spreading this disease, which never ought to occur if the surroundings of the patient are cleanly and strict precautions are taken to keep them so. As in the previous years weekly returns of the new cases of infectious disease are sent to the Local Government Board, and also, by your permission, to the Medical Officer of the County Council. These Returns are tabulated and distributed in the ensuing week. This system is most useful to Medical Officers throughout the country, enabling them to judge of possible dangers to the districts of which they have charge. At the beginning of October, new forms under the Notification Act were sent to all the medical men in the City. There were added to the form scheduled in the Act, questions for the medical men to voluntarily fill in, concerning age of patient, sex, if willing to be removed to the Isolation Hospital, and if sufficiently isolated at home. The medical practitioners have very kindly supported the action of the Health Committee and thus enabled the Act to be more easily and expeditiously worked.

The notifiable diseases have been distributed through the year as follows:—

Month.	Smallpox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Continued Fever.	Puerperal Fever.	Erysipelas.	Total.
January	6	7	3	6	...	1	12	35
February	2	11	1	8	...	...	8	30
March	...	16	2	9	...	1	6	34
April	...	29	5	1	1	1	6	43
May	1	20	2	...	...	1	8	32
June	...	26	3	3	...	...	4	36
July	...	35	3	8	...	...	5	51
August	...	25	2	4	...	2	10	43
September...........	...	33	4	5	...	1	3	46
October	...	43	3	9	...	1	11	67
November	2	14	6	8	...	1	8	39
December	2	14	5	4	...	...	13	38
Total for 1893 ...	13	273	39	65	1	9	94	494
,, 1892 ...	1	236	27	67	1	6	98	436
,, 1891 ...	...	40	10	73	...	6	55	184
,, 1890 ...	...	131	10	77	...	7	79	304

Smallpox.—There have been 13 cases of this disease notified, with one death. The disease has been during the year imported into the City on five separate occasions; on four of these the man bringing it was "on the tramp," three of these men stayed at Common Lodging-houses and the other in the Casual Ward of the Workhouse. The outbreak in January was limited to seven cases—that in November to two cases, and a man living on a canal boat (notified on December 23rd) infected two other persons who were attacked in January, 1894, and so are not included in these statistics. Two men were isolated in an early stage and no other cases were known to have resulted from contact with them. A boy aged six, admitted to the Barbourne Hospital for Scarlet Fever, contracted Smallpox there during his convalescence. He was unvaccinated and had a most severe attack of the disease, but survived. Your Authority is to be congratulated that the City has escaped any more severe outbreak than these related above. The Public Vaccinators have given most efficient aid in stamping out the disease, and a number of persons who had been in contact with it consented to be re-vaccinated. The Vaccination Officer also made house to house visitation in the districts affected and dealt with many children whom he found unvaccinated.

The following is a list of the Smallpox cases notified during the year. None of the patients had been re-vaccinated, but all except Number 12 had been vaccinated in Infancy. All the patients recovered except Number 11.

No.	Name.	Sex.	Age.	Date of Notification.	No. of Vaccination Marks.	Type of Disease.
1	R. L.	M	31	Jan. 5	1	Semi-confluent.
2	E. T.	F	22	„ 8	4	Discrete.
3	A. R.	F	12	„ 9	1	„
4	L. T.	M	18	„ 21	2	„
5	N. J.	F	18	„ 22	4	„
6	A. L.	M	42	„ 23	2	Semi-confluent.
7	E. C.	F	28	Feb. 7	2	Discrete.
8	J. G.	M	–	„ 7		This case was treated at the Workhouse.
9	B. L.	M	37	May 26	2	Confluent.
10	P. M.	M	27	Nov. 2	5	Discrete.
11	J. B.	M	75	„ 20		Confluent.
12	A. S.	M	6	Dec. 17	Unvaccinated	„
13	E. H.	M	46	„ 23	2	„

Scarlet Fever.—This disease has been epidemic throughout the year, but of a mild type. The 273 cases have occurred in 218 houses, and 143 cases (52 per cent.) were removed to the Isolation Hospital. Many more cases would have been received if the accommodation had been adequate. There were four deaths registered from the disease, being 1·4 per cent. of persons attacked, and one of these occurred at the Isolation Hospital. The number of houses (170) having only single cases in them gives conclusive evidence of the value of notification and of speedy removal to Hospital; for without these aids the epidemic would in all probability have been far more wide-spread and severe, and the school attendance would have been seriously interfered with.

Diphtheria.—During the year 39 cases have been notified in 37 houses, with nine deaths (*i.e.*, 23 per cent. of the persons attacked); six of the persons dying were under five years of age. In two houses two cases occurred in each, the remaining cases were sporadic and no cause could be found. In four houses only were defective drains found. The origin of this disease is frequently mysterious. Some eminent authorities hold that insanitary surroundings do not cause the disease, but may so depress the vital powers that a person living among such becomes pre-disposed to infection. This disease which used to be one mainly of rural districts has of late years considerably increased in the large towns, in spite too of the greatly improved sanitary condition of these towns. During the period 1861-70 the Diphtheria mortality rate per million living was for England and Wales 187, for London 179. In the next decennium the rates were 121 and 122 respectively, while in the decennium 1881-90 they were 163 for England and Wales and 259 for London. Dr. Longstaffe* has shown that during the whole period 1855-80, although the sparsely populated districts suffered most heavily from Diphtheria, yet the Diphtheria mortality of the towns relatively to that of the rural districts has become greater.

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* The Geographical distribution of Diphtheria in England and Wales.

The same author further says that "the distribution of Diphtheria is apparently *sui generis;* the mortality from the disease clearly is not regulated by the same causes as influence the general mortality."

Typhoid Fever.—Of this disease 65 cases have been notified, occurring in 61 houses, with nine deaths. Of the 65 cases, seven probably caught the disease when visiting away from the City. In the 61 houses, obviously defective drainage was discovered in eight instances, and these defects were made good; so that in more than three-fourths of the houses the drainage and surroundings did not seem to be at fault. In most houses also the W.C. and the whole of the drainage is outside and detached from the house. The streets or roads in which this disease has occurred have been printed in the Reports for the four quarters of the year.

Puerperal Fever.—Of the nine cases of this disease notified, six died. Two of the patients were in the practice of the same midwife, within a short time, who was warned of the danger of continuing her work, and who abstained from so doing for a month. The other cases had no connecting link so far as could be ascertained.

Erysipelas.—There were 94 cases of this disease notified, of which 16 occurred in the Wards of the General Infirmary. One death occurred in an old enfeebled person. In no house did the disease spread from the person first attacked.

During the year your Authority paid £42 6s. 0d. as compensation for articles of bedding and clothing destroyed, which had become infected with Smallpox, and which we have no means of properly disinfecting and so were burnt.

It is much to be regretted, in my opinion, that your Authority decided early in the year not to erect any kind of Disinfecting Apparatus. I had hoped that the visit of several members of the Health Committee to Birmingham to inspect the Disinfecting Station there would have impressed them with the utility and necessity for a similar apparatus.

The Library and Museum Committee, in consequence of their attention being drawn to the fact that borrowed books have been found in houses that had infectious disease in them, made the following Regulations which were printed in January, 1893.

63. "No person shall borrow any book from the Public Library of the City of Worcester during so long as he or she is suffering from, or is resident in a house in which there exists, a case or cases, of any of the following infectious diseases, that is to say, small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina or scarlet fever, and the fevers known by any of the following names: typhus, typhoid, enteric, relapsing, continued, or puerperal."

64. "Any person who has in his or her possession, or under his or her control, any book borrowed from the said Library, shall immediately upon his becoming aware that he or she is suffering, or that any other person resident in the house in which such book may happen to be, is suffering from any one of the infectious diseases mentioned in Regulation No. 63, deliver or cause to be delivered, such book to the Librarian or to one of his Assistants at the said Library, and shall at the same time give notice to such Librarian or Assistant of the existence of such case or cases of infectious disease."

These Regulations will warn thoughtless persons of the danger of infecting books and thus check the spread of disease. Each week I supply the Librarian with a list of the houses in which certain infectious diseases exist, to enable him to have these Regulations the better observed. During the year books have been brought back from 16 infected houses; and in three instances books have been refused to persons in whose house infectious disease has been known to exist. The infected books have been withdrawn from circulation.

THE ISOLATION (BARBOURNE) HOSPITAL.

During the year 164 cases of infectious disease have been treated there. This number is greatly in excess of the number in any previous year, as will be seen in the following Table shewing the admissions during 1893, and for the ten years preceding :—

	Smallpox.	Diphtheria.	Typhoid Fever.	Scarlet Fever.	Measles.	Total.
1883	3	...	7	9	1	20
1884	2	...	22	8	...	32
1885	...	...	5	43	...	48
1886	1	1	17	24	...	43
1887	...	...	8	41	...	49
1888	...	1	10	41	...	52
1889	...	2	17	16	...	35
1890	...	...	22	97	...	119
1891	...	...	20	24	1	45
1892	1	4	9	107	1	122
Average for 10 years	·7	·8	13·7	41	·3	56·5
1893	**12**	...	**8**	**143**	**1**	**164**

Three deaths occurred among the patients, one from Smallpox, one from Typhoid Fever, one from Scarlet Fever.

Eight of the patients admitted remained under the care of their own medical man.

The ages of the patients admitted were as follows :—

	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 65 years.	Over 65 years.
Scarlet Fever	25	98	16	4	...
Smallpox	...	1	6	4	1
Typhoid Fever......	...	...	5	3	...

It will be observed that the large number of cases of Scarlet Fever admitted prevented cases of other diseases being taken in. It would not have been possible to admit so many cases of Scarlet Fever had not the weather been continuously fine and warm and so allowed free ventilation through the small rooms. Almost every week cases were obliged to be refused admission. The cases of Typhoid Fever were nearly all treated in the Iron Room, and did very well there. No case of Diphtheria could be admitted, and this is the more to be regretted as the attacks of this disease have been more numerous in 1893 and 1892 than in the two former years, as will be seen by the table on page 7.

The consideration of the provision of an Isolation Hospital consonant with modern requirements has been before your Authority on several occasions throughout the past year. Much time and thought has been given to the matter, but little advance has been made. The greatest blot on the present Hospital has been removed by your Authority erecting a Hospital for Smallpox at a place far removed from all houses. The greatest difficulty has been to select a suitable site for an Isolation Hospital. No one wants it in that part of the City where they live. There has never been an iota of proof that Hospitals containing infectious diseases (exclusive of Smallpox) tend in the least to the spread of such diseases in the neighbourhood. An area of 40 feet between the buildings and the boundary wall of the Hospital is fully sufficient to protect from infection. The Corporation Surveyor, Mr. H. Rowe, has laid plans before the Health Committee for a Hospital capable of receiving 40 patients, and providing for the accommodation in separate buildings of Scarlet Fever, Typhoid Fever and Diphtheria. These buildings are designed in accordance with the best that is known of Hospital construction, and have my hearty approval. It is much to be desired that another year will not be allowed to pass without this necessary work being begun.

The present Hospital at Barbourne was in May connected with the Telephone system, in case of accident from fire or sudden emergency needing help. This has been found of great service in many ways.

BAKEHOUSES.

There were 80 bakehouses in use in the City during the year 1893, and six not in use; two new bakehouses have been opened; one bakehouse has had a new oven erected, which is stoked from outside, and which enables much more cleanliness to be observed, and makes the occupation less unhealthy, as none of the products of imperfect combustion can escape into the bakehouse. I paid 198 visits, and served 14 notices for the whitewashing and cleansing of the premises. In 10 instances I found "young people" employed and acquainted H.M. Inspector of the fact, that he might satisfy himself that the conditions of their employment were in accordance with the Acts. In classifying the bakehouses, I should call the condition in 8 very good, in 26 good, in 41 fair, in 5 bad. There are in no cases any conditions prejudicial to health, except where the workers neglect to use the means of ventilation provided.

The Sewerage System has been extended during the year, and new sewers have been laid in Bath Road, in Bowling Green Terrace, and in Farley Street. Flushing tanks have been put in connection with these new sewers.

During the long dry and hot summer, frequent complaints were sent to the Health Offices of the bad smells from the sewer ventilating grids. These complaints, as in former years, were mostly from the parts of the City situate on the sides of the hills. It is most probable that deposit has taken place in some of the sewers and that this is the cause of the malodours. Would it not be advisable to find out whether or not deposits have occurred in portions of the main sewers. In certain parts of the City a special kind of ventilator has been put in which is the invention of Mr. Caink, and which is successful in eliminating the noxious smells. The outcoming air is filtered through a thick layer of cotton wool, and an ingenious method is used for preventing the atmospheric moisture from condensing in the cotton wool and so rendering it useless. The air issues from the sewer in a slower stream, becomes diluted with fresh air the more readily and so is not perceptible as foul air; the microbes of the sewer air are also probably mostly caught and retained in the cotton wool. It is much to be desired that some ventilating shafts should be connected with the sewers on the rising ground in various parts of the City. These would allow of free ventilation above the heads of passers-by and permit, under ordinary conditions, the road grids in the lower parts to act as inlets only.

The Water Supply.—The work of making the new filter beds at the Waterworks has been in progress, and one filter was finished before the end of the year but not in use. The total area of filters was 2,720 square yards; it will be 4,950 square yards when the three new beds are complete. The demand for water during 1893 was very great, and an average of nearly 1,600,000 gallons per day was pumped. This gave 36 gallons per head per day to the whole population. This is an excessive amount, and 30 gallons should be found sufficient, if waste be prevented.

A new water main has been laid in Hill Avenue, and 3,000 yards of main have been renewed, as the old mains which had been in use for more than 30 years were so corroded as to greatly diminish their calibre.

During recent months, three most important documents concerning the use of river water for drinking purposes have been published. They are, "The Report of the Royal Commission to enquire into the Water Supply of the Metropolis," a "Report by Professor Koch on Water Filtration and Cholera," and a "Report by Dr. Barry, of the Local Government Board, on Epidemics of Typhoid Fever in the Tees Valley in 1890-91." All these reports deal with the question of the efficiency of sand filtration in protecting a community from diseases that may attack it by the using of water from a polluted source. The following paragraphs are deductions drawn from the evidence given in these reports:—

It should be clearly understood that the consideration of the quality of drinking water has now become chiefly a biological question, one concerning the small organisms which are known to be the cause of water-borne diseases; and these diseases may be limited to Cholera and Typhoid Fever. That all rivers in civilized countries are seriously contaminated at many points of their course is not disputed; nor that this contamination often is of that character which *may* lead to infectious disease in persons partaking of the water of such rivers. The question of safety in using such water depends (1) on the natural processes of purification that go on in rivers, and (2) on the efficiency of filtration in preventing these harmful organisms being distributed to drinkers.

Respecting the self-purification of rivers, a great change has taken place in opinion of late years and in consequence of strict scientific enquiries. Even those scientists who have been unsparing critics of river water, have materially altered their tone respecting it.

It has been found that there are many agencies at work antagonistic to the life of the pathogenic bacteria. The greatest of these is sunlight. The direct light of the sun kills nearly all germs in a few hours; and ordinary daylight injuriously affects their vitality and retards their multiplication. This is so important a matter that Dr. Sims Woodhead says: "In the laboratory we are compelled to keep all our pure cultures, which are under favourable conditions of growth, in a dark cupboard, otherwise they would die out, rapidly becoming weaker and weaker. The same, of course, must be the case where, as in water under the open air, organisms are exposed to light." The second most efficient agent in removing the bacteria from the water is the subsidence that is constantly taking place even in running water. The mud and other substances in suspension fall and carry down with them the bacteria. In experiments made on this point with water at rest, it has been found that three-fourths or even a larger proportion of the bacteria are precipitated. Hence it would appear that subsidence tanks are a very important part of water-works such as ours. But our subsidence tanks have so far been of little service in this way, for the water is obliged to be constantly in motion through them, as we have so little storage capacity.

A third agency that diminishes the number of pathogenic bacteria is the multitude of ordinary bacteria that abound in river water, and which in their growth destroy the former. A passage in the report of the Royal Commission reads thus: "It is this antagonism of the non-pathogenic to the pathogenic bacteria, that supplies an explanation of the otherwise unintelligible fact, as to which all the bacteriological witnesses seem to agree, that pathological bacteria will live longer in distilled water or in water that has been previously sterilised, that is, from which all other bacteria have been removed, than in ordinary river water."

Next, as to the efficiency of sand filtration in removing bacteria from water. From Dr. E. Frankland's report concerning the filtration of the Thames, by the London Water Companies, it appears that as a general rule from 98 to 99 per cent., or even a larger proportion of the microbes that exist in the river are removed from the water before it is supplied to the consumer. Similar results have been obtained in other places where frequent and careful bacteriological examinations have been made. It has been shown, moreover, that the removal of the bacteria is effected by the layer of mud and living organisms that forms on the upper surface of the sand when a filter bed is working well. If filtration is carried on at a speed not exceeding 100 m.m. or 3·3 inches an hour (that is less than two gallons per square foot per hour), the water filtered contains not more than one hundred germs capable of development in one cubic centimetre of water, and this is independent of the number of the bacteria contained in the unfiltered water.

The efficient working of filters should be tested from this bacteriological standpoint, which has been deduced from prolonged observation by Professor R. Koch, of Berlin. He attributes the comparative immunity of the City of Altona from Cholera in the last epidemic, to the careful filtration of the horribly polluted water of the Elbe.

The details of the management of filter beds are of the highest importance, and full of practical difficulties. These difficulties are well nigh insuperable unless there is *ample* filtering area. When the Severn comes down in flood, the sediment chokes the bed in a very short time and very little water will pass through. After a bed has been scraped the water passes through the sand too quickly, and under ordinary circumstances should not be allowed to pass into the pure water tank for at least three or four days. When the sand of a bed has been renewed a much longer period must elapse, and a totally new filter bed may not work properly for some weeks. All these considerations make it necessary for the safety of the consumers of the water, that allowing for cleansing of the beds, and for the beds recently cleansed to get into good working order, the remaining area should be capable of supplying sufficient water which has passed through at a rate not exceeding two gallons per square foot per hour. Even when the new filters, now being made, are in good working order, the area will hardly suffice to ensure this result. But the water will be very greatly improved, and in the near future the best result may be obtained. When the best possible result has been obtained the citizens will have a good and safe water supplied to them, and will never be in fear of drought.

As stated above, the real test of efficiency of filtration is to be found in the number of bacteria that are contained in the filtered water, and this estimation should be made at short intervals of time.

Your Public Analyst, Dr. Swete, has a fully equipped Bacteriological Laboratory at Fort Royal, and has for many months past been making observations of this character on the Severn water.

These examinations should be more relied on by Sanitary Authorities than those of a chemical nature, for the former deal with the very organisms which *may* spread disease among the consumers. Respecting the pollution of the Severn by crude sewage, it is within the power of your Authority to put in force the Rivers Pollution Prevention Act; and when the sewage of Worcester is being treated as proposed, attention may be turned to the towns higher up the river.

On the 26th and 30th of August an inquest was held by the City Coroner to enquire into the cause of death of a boy who had died at the General Infirmary from Anthrax. I attended the inquest and reported at length to the Health Committee at their ensuing meeting.

The boy E. H., aged 14, was employed at the Horse-hair Factory of Messrs. E. Webb and Son, in Copenhagen Street. This boy had nothing to do with the hair until after it had undergone partial process of manufacture, but he had been found playing over the bales of horse-hair in the store room; and in this way he very probably contracted the disease.

There have been six previous cases of this disease known to have occurred among the workers at Messrs. Webb's factory, but none of them proved fatal.

The first two cases occurred in March, 1891, and the girls were employed in sorting the horse-hair. After this time Messrs. Webb bought the hair already sorted. The third case occurred in May, 1892, and the girl was a spinner. The hair from this time was put into very hot water and carbolic acid before being spun. The fourth case occurred in June, 1892, in a boy who had a few days previously swept up the yard and had sorted the sweepings. This boy had also been found playing in the store room, and it was thought he might have contracted the disease from the coverings of the bales. To prevent this it was ordered that the bales should be thrown whole into the hot water tank and the coverings be removed in the tank and afterwards burnt. But this order was disregarded, and the fifth and sixth cases occurred in men in July, 1893, who were known to have taken the hair out of the bales in armfuls to throw into the tank.

Since the raw hair has been treated with the hot water and carbolic acid no case of Anthrax has occurred among those working up the hair. To prevent any further possible injury to their employés, Messrs. Webb and Son have erected at a cost of nearly £300 a Washington Lyon's high pressure steam apparatus, into which the bales of horsehair will be put on arrival. Mr. Albert Webb tested the efficiency of this apparatus at the manufacturer's and found that a heat of 230° F. could be readily induced in the centre of a bale, which temperature is more than enough to destroy the spores of any disease. This is the same apparatus which I have recommended to your Authority for the disinfection of the bedding and clothing which has been exposed to dangerous infectious disease.

So far back as 1777 this disease was described in Paris as attacking horse-hair workers, and it was recognised then that the most dangerous hair came, as now, from Russia. The first cases published in England were in the year 1847 ; but these attracted so little attention that, in a paper written on the subject in 1862, the author states that he was unable to find evidence of the disease in England. In a Report by Dr. Russell to the Local Government Board in 1878, on cases of Anthrax occurring at the Adelphi Horse-hair Factory at Glasgow, it is stated that "It is unfortunately too probable that we cannot infer from the absence of any record of such outbreaks of Anthrax among British hair workers that no such outbreaks have occurred. The probability is that they have occurred from time to time, but being chiefly of the intestinal or internal variety, as in the present instance, they have not been recognised."

There is no doubt that the spores of this fatal disease are brought in the hair; and mostly in that hair known as "Russian Manes," from the districts in Russia where it is endemic among the horses or cattle. The "manes" are often mixed wiih cow-hair, and are very dirty, and are said to be often derived from dead animals probably infected with Anthrax.

Workers in foreign wool are subject to this disease, as well as men unloading cargoes of hides, or engaged in handling them in the raw state.

The thorough destruction of the spores is more easily managed in horse-hair manufacture than in the other trades mentioned, and Messrs. Webb and Son have taken the best possible means to secure this end, and to protect the health and lives of the persons in their employ.

THE HOUSING OF THE WORKING CLASSES ACT (1890).

Under this Act I have made three Reports during the year. (1) On a house at the corner of the Shambles next to Pump Street. This house is only used for business purposes by day, and was structurally unsafe. Alterations were made to remedy this under the directions of the City Surveyor. (2) On three houses in the Shambles. These were thoroughly renovated and the sanitary arrangements made good. (3) On a group of 15 houses in Birdport and Hare's Lane. Up to the present time, partial repairs have been done to most of these, but much needs still to be done. Three of the houses have been closed by Magistrates' Order as unfit for habitation, no opposition being made on the part of the owners.

THE FACTORY AND WORKSHOP ACT (1891).

There are 197 Workshops on our Register. The Inspectors of the Sanitary Authorities have to do only with Workshops, as distinct from Factories. In the Workshops we have to ascertain the condition of the water closets and drainage, the cleanliness of the rooms, the means of ventilation, and the amount of cubic space, 250 feet being necessary for each person by day, and 400 cubic feet when overtime is being carried on.

Frequent inspections have been made; orders for whitewashing and cleansing given when necessary; in a few instances increased closet accommodation has been ordered and provided. On the whole the premises in which the work has been carried on have been found clean and wholesome.

The disposal of the refuse of the City is still very unsatisfactory. The valley at the back of the Workhouse is now nearly filled, and heaps of refuse of all kinds are being deposited in gravel pits in some parts of the City. A particularly obnoxious heap is being formed at the north and east end of York Place, Britannia Square. The question of providing a Refuse Destructor has been postponed indefinitely, but I would suggest that if such a building were erected in connection with the Sewage Works the extra cost would not be felt. The Citizens of a century ago built rows of houses in their gardens, now forming the unwholesome courts and alleys of our City, which must ever be a source of sickness and cause of high mortality in the districts where they abound, and we are polluting the soil for our descendants by burying our rubbish about our houses. This pollution of the soil is a serious matter, and some eminent sanitarians are strongly of the opinion that certain infectious diseases, the origin of which are often obscure, such as Diphtheria and Typhoid Fever, may arise from soil pollution, the germs of the diseases finding in such soil a suitable breeding place. The extreme complexity of the problems connected with the origin of these diseases make it impossible to speak dogmatically, but the probability that disease may arise from soil pollution should be sufficient to prevent a Sanitary Authority continuing to deliberately pollute the soil about the houses in their City.

Your Authority in November gave your consent, under certain conditions, to the establishment of the trade of tallow rendering and soap-boiling on some premises at the back of the north side of Tybridge Street. Work had not been commenced there up to the end of the year.

No complaints have reached me during the year of nuisance arising from offensive trades carried on in the City; but complaints have been made to the Inspector who have dealt with them without my intervention.

Complaints of nuisance from keeping pigs were almost daily sent to the Health Office during the hot and dry summer months. One prosecution was undertaken, resulting in the removal of the nuisance and a fine of two shillings and sixpence.

The Yearly Report of the Sanitary Inspector is to be found after the Tables of Statistics. It is gratifying to find that the places constantly under his inspection are kept in such good order. As is pointed out the old parts of the City are frequently in need of repairs, and the habits of the persons occupying them are such as to need constant supervision.

Dr. Swete has very kindly sent me a Metereological Report for the year, and has supplied me with monthly Reports from observations taken at Fort Royal.

I remain,
Mr. Mayor and Gentlemen,
Your obedient Servant,
MAYBN READ, M.D., D.P.H.,
Medical Officer of Health.

March 15th, 1894.

TABLE 1.—DEATHS REGISTERED FROM ALL CAUSES *during the year* 1893.

NOTE.—The Deaths of Non-Residents occurring in Public Institutions situated in the District are excluded, and the Deaths of Residents occurring in Public Institutions situated beyond the limits of the District are included.

	AGES.											Totals.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	
I. SPECIFIC FEBRILE, OR ZYMOTIC DISEASES	51	33	11	4	5	4	2	2	2	4	2	120
II. PARASITIC DISEASES	...	...	...	...	...	...	...	...	...	...	...	...
III. DIETIC DISEASES	3	...	...	...	...	...	...	1	...	...	...	4
IV. CONSTITUTIONAL DISEASES	13	10	10	8	12	21	21	12	9	5	1	122
V. DEVELOPMENTAL DISEASES	32	...	...	...	...	...	...	1	20	40	16	109
VI. LOCAL DISEASES	40	25	19	13	23	41	42	69	65	37	3	377
VII. DEATHS FROM VIOLENCE	4	4	3	...	8	4	2	3	1	1	...	30
VIII. DEATHS FROM ILL-DEFINED and NOT SPECIFIED CAUSES	64	6	...	...	1	...	...	...	1	...	2	74
TOTALS	207	78	43	25	49	70	67	88	98	87	24	836
I.—Specific Febrile, or Zymotic Diseases.												
1.—MIASMATIC DISEASES.												
Smallpox—Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox—Unvaccinated	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox—No Statement	...	...	...	...	...	...	...	...	...	1	...	1
Measles	3	13	3	...	...	...	...	...	...	...	...	19
Scarlet Fever	1	3	...	...	...	...	...	...	...	...	...	4
Typhus	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	1	5	...	...	...	...	...	...	...	...	...	6
Diphtheria	...	6	3	...	...	...	...	...	...	...	...	9
Simple Continued and Ill-defined Fever	...	...	...	...	...	...	...	...	...	...	...	...
Enteric or Typhoid Fever	...	2	2	3	2	...	...	...	...	...	...	9
Epidemic Influenza	...	...	...	...	1	2	1	1	2	3	2	12
2.—DIARRHŒAL DISEASES.												
Simple Cholera	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa, Dysentery	40	3	1	...	...	...	...	...	...	...	...	44
3.—MALARIAL DISEASES.												
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	1	...	...	...	...	...	...	...	...	1
4.—ZOOGENOUS DISEASES.												
Cowpox and effects of Vaccination	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases (*e.g.*, Hydrophobia, Glanders, Splenic Fever)	...	...	1	...	...	...	...	...	...	...	...	1
5.—VENEREAL DISEASES.												
Syphilis	6	...	...	...	...	...	...	...	...	...	...	6
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	...
6.—SEPTIC DISEASES.												
Erysipelas	...	...	...	...	...	...	...	...	1	...	...	1
Pyæmia, Septicæmia	...	1	...	...	...	...	...	...	...	...	...	1
Puerperal Fever	...	...	...	1	2	2	1	...	...	...	...	6
II.—Parasitic Diseases.												
Thrush, and other Vegetable Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
Worms, Hydatids, and other Animal Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...
III.—Dietic Diseases.												
Want of Breast Milk, Starvation	3	...	...	...	...	...	...	...	...	...	...	3
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Alcoholism	...	...	...	...	...	...	...	1	...	...	...	1
Delirium Tremens	...	...	...	...	...	...	...	...	...	...	...	...
IV.—Constitutional Diseases.												
Rheumatic Fever, Rheumatism of the Heart	...	1	3	...	1	3	...	...	...	...	...	8
Rheumatism	...	...	1	...	...	...	...	...	...	...	...	1
Gout	...	...	...	...	...	...	...	...	...	...	...	...
Rickets	1	...	...	...	...	...	...	...	...	...	...	1
Cancer, Malignant Disease	...	...	...	...	...	2	8	8	6	5	1	30
Tabes Mesenterica	9	4	...	...	...	...	...	...	...	...	...	13
Tubercular Meningitis, Hydrocephalus	3	4	2	1	...	...	..	...	...	...	...	10
Phthisis	...	...	2	5	11	15	10	3	1	...	...	47
Other forms of Tuberculosis, Scrofula	...	1	2	...	...	...	...	...	...	...	...	3
Purpura, Hæmorrhagic Diathesis	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia, Chlorosis, Leucocythæmia	...	...	...	1	...	...	...	...	...	...	...	1
Glycosuria, Diabetes Mellitus	...	...	...	1	...	1	3	1	2	...	...	8
Other Constitutional Diseases	...	...	...	...	...	...	...	...	...	...	...	...
V.—Developmental Diseases.												
Premature Birth	24	...	...	...	...	...	...	...	...	...	...	24
Atelectasis	2	...	...	...	...	...	...	...	...	...	...	2
Congenital Malformations	6	...	...	...	...	...	...	...	...	...	...	6
Old Age	...	...	...	...	...	...	...	1	20	40	16	77
VI.—Local Diseases.												
1.—DISEASES OF NERVOUS SYSTEM.												
Inflammation of Brain or Membranes	...	5	4	...	1	1	...	...	1	...	...	12
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	...	1	...	...	...	2	9	17	13	9	1	52
Insanity, General Paralysis of the Insane	...	...	...	...	1	2	1	...	1	1	...	6
Epilepsy	...	...	1	...	...	1	...	...	...	...	...	2
Convulsions	9	3	1	...	...	...	...	...	...	...	...	13
Laryngismus Stridulus (Spasm of Glottis)	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	...	...	...	...	...	1	1	...	...	...	...	2
Other Diseases of Nervous System	...	...	...	...	...	1	...	...	...	...	...	1
2.—DISEASES OF ORGANS OF SPECIAL SENSE. (*e.g.*, of Ear, Eye, Nose)	...	...	1	...	1	...	...	...	...	...	...	2
3.—DISEASES OF CIRCULATORY SYSTEM.												
Pericarditis	...	...	1	...	...	...	...	...	...	...	...	1
Acute Endocarditis	...	...	...	...	1	...	...	...	...	...	...	1
Valvular Diseases of Heart	...	...	...	...	...	...	4	...	3	1	...	8
Other Diseases of Heart	...	...	3	4	2	12	5	15	14	11	...	66
Aneurism	...	...	...	...	1	...	...	...	...	...	...	1
Embolism, Thrombosis	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Blood Vessels	...	...	...	1	...	...	...	...	...	...	...	1
4.—DISEASES OF RESPIRATORY SYSTEM.												
Laryngitis	...	1	...	...	...	...	...	1	...	...	...	2
Croup	...	...	1	...	...	...	...	...	...	...	...	1
Emphysema, Asthma	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis	12	6	1	1	1	2	6	11	9	8	1	58
Pneumonia	6	6	...	5	7	4	3	7	7	2	...	47
Pleurisy	1	...	1	...	1	1	...	...	...	1	...	5
Other Diseases of Respiratory System	...	1	...	...	1	...	1	...	...	...	...	3

	AGES.											Totals.
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards.	
5.—DISEASES OF DIGESTIVE SYSTEM.												
Dentition	4	1	...	...	...	...	...	...	...	...	...	5
Sore Throat, Quinsy	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Stomach	2	...	...	...	...	3	3	2	1	1	...	12
Enteritis	4	...	...	...	...	...	...	3	1	1	1	10
Obstructive Diseases of Intestine	...	1	2	...	1	...	...	2	...	...	...	6
Peritonitis	1	...	1	1	...	...	...	...	1	1	...	5
Ascites	...	...	...	...	...	...	...	..	...	...	...	...
Cirrhosis of Liver	...	...	...	...	1	3	5	6	2	2	...	19
Jaundice and other Diseases of Liver	1	...	...	...	...	1	...	...	2	1	...	5
Other Diseases of Digestive System	...	...	...	...	...	...	...	1	...	...	...	1
6.—DISEASES OF LYMPHATIC SYSTEM. (*e.g.*, of Lymphatics and of Spleen)	...	...	...	...	...	1	...	...	...	...	...	1
7.—DISEASES OF GLAND-LIKE ORGANS OF UNCERTAIN USE. (*e.g.*, Bronchocele, Addison's Disease)	...	...	...	...	...	...	1	...	...	...	...	1
8.—DISEASES OF URINARY SYSTEM.												
Nephritis	...	...	...	...	1	...	1	2	1	...	...	5
Bright's Disease, Albuminuria	...	...	...	1	...	1	1	2	3	...	...	8
Disease of Bladder or of Prostate	...	...	...	...	...	1	1	...	2	1	...	5
Other Diseases of the Urinary System	...	...	...	...	...	1	...	...	...	...	...	1
9.—DISEASES OF REPRODUCTIVE SYSTEM.												
A. *Of Organs of Generation.*												
Male Organs	...	...	...	...	...	...	...	...	..	...	...	...
Female Organs	...	...	...	...	...	1	...	...	...	...	...	1
B. *Of Parturition.*												
Abortion, Miscarriage	...	...	...	...	...	2	...	...	...	...	...	2
Puerperal Convulsions	...	...	...	...	...	...	...	...	...	...	...	...
Placenta prævia, Flooding	...	...	...	...	...	...	...	...	...	...	...	...
Other Accidents of Child Birth	...	...	...	...	1	1	...	...	...	...	...	2
10.—DISEASES OF BONES AND JOINTS.												
Caries, Necrosis	...	...	...	...	...	1	...	...	1	...	...	2
Arthritis, Ostitis, Periostitis	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Bones and Joints	...	...	2	...	...	...	...	...	...	...	...	2
11.—DISEASES OF INTEGUMENTARY SYSTEM.												
Carbuncle, Phlegmon	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Integumentary System	...	...	...	...	...	...	...	...	...	...	...	...
VII.—Deaths from Violence.												
1.—ACCIDENT OR NEGLIGENCE.												
Fractures and Contusions	...	...	...	...	3	...	1	1	...	1	...	6
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	...
Cut, Stab	...	...	...	...	...	...	...	...	...	...	...	...
Burn, Scald	...	2	2	...	...	...	...	1	...	...	...	5
Poison	...	1	...	...	1	...	...	...	...	...	...	2
Drowning	...	1	...	...	1	...	...	...	...	...	...	2
Suffocation	4	...	...	...	...	...	...	...	1	...	...	5
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...
2.—HOMICIDE.												
Manslaughter	...	...	...	...	...	1	...	...	...	...	...	1
Murder	...	...	...	...	...	...	...	...	...	...	...	...
3.—SUICIDE.												
Gunshot Wounds	...	...	...	...	...	...	...	...	...	...	...	..
Cut, Stab	...	...	...	...	...	...	...	...	...	...	...	...
Poison	...	...	...	...	2	...	...	...	...	...	...	2
Drowning	...	...	...	...	...	1	...	...	...	...	...	1
Hanging	...	...	1	...	...	2	1	1	...	...	...	5
Otherwise	...	...	...	...	...	...	...	...	...	...	...	...
4.—EXECUTION.												
Hanging	...	...	...	...	1	...	...	...	...	...	...	1
VIII.—Deaths from Ill-defined and not Specified Causes.												
Dropsy	...	...	...	...	...	...	...	...	...	...	...	...
Debility, Atrophy, Inanition	61	5	...	...	...	...	...	...	...	...	...	66
Mortification	...	...	...	...	...	...	...	...	1	...	1	2
Tumour	...	...	...	...	...	...	...	...	...	...	...	...
Abscess	...	1	...	...	...	...	...	...	...	...	...	1
Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...
Sudden Death (cause not ascertained)	...	...	...	...	...	...	...	..	...	...	...	...
Causes not Specified or Ill-defined	3	...	...	...	1	...	...	...	...	...	1	5

SUMMARY OF TABLE.

	No. of Deaths		No. of Deaths
I.—Specific Febrile, or Zymotic Diseases.		*Brought forward*	702
1. Miasmatic Diseases	60	**VI.—Local Diseases—continued.**	
2. Diarrhœal ,,	44	6. Diseases of Lymphatic System	1
3. Malarial ,,	1	7. Diseases of Gland-like Organs of Uncertain Use	1
4. Zoogenous ,,	1	8. Diseases of Urinary System	19
5. Venereal ,,	6	9. Diseases of Reproductive System	—
6. Septic ,,	8	(*a*) Diseases of Organs of Generation	1
II.—Parasitic Diseases	—	(*b*) Diseases of Parturition	4
III.—Dietic Diseases	4	10. Diseases of Bones and Joints	4
IV.—Constitutional Diseases	122	11. Diseases of Integumentary System	—
V.—Developmental Diseases	109	**VII.—Violence.**	
VI.—Local Diseases.		1. Accident or Negligence	20
1. Diseases of Nervous System	88	2. Homicide	1
2. Diseases of Organs of Special Sense	2	3. Suicide	8
3. Diseases of Circulatory System	78	4. Execution	1
4. Diseases of Respiratory System	116	**VIII.—Ill-defined and Not Specified Causes.**	74
5. Diseases of Digestive System	63		
Carried forward	702	TOTAL	836

VITAL STATISTICS.

Population, estimated to the middle of 1893	**43,480**
Deaths	**836**
Death-rate per 1,000 of the population	**19·2**
Deaths under 1 year	**207**
Infantile death-rate per 1,000 births registered during the same period	**166**
Deaths from seven principal Zymotic diseases	**92**
Zymotic death-rate	**2·1**
Births { Male......624 Female...620 } Total	**1,244**
Birth-rate per 1,000 of the population	**28·6**

TABLE II.

AGE AND SEX, DISTRIBUTION OF DEATHS FOR EACH MONTH OF THE YEAR.

		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	
Under 1 year......	Male......	8	8	16	5	4	17	9	9	5	3	7	18	109	207
	Female...	12	7	8	7	6	11	10	6	9	6	7	9	98	
1 to 5 years	Male......	1	1	4	5	3	4	1	4	5	...	4	10	42	78
	Female...	4	...	6	2	3	1	2	1	3	1	1	12	36	
5 to 60 years......	Male......	11	6	21	15	10	8	14	15	11	13	10	22	156	302
	Female...	10	12	14	17	11	11	11	7	6	11	19	17	146	
60 years and over	Male......	9	8	9	10	8	5	11	8	8	6	12	13	107	238
	Female...	18	10	10	12	10	12	5	3	16	3	12	20	131	
		73	52	88	73	55	69	63	53	63	43	72	121	M. 414 F. 411	825

TABLE III.

Deaths and Births occurring in Parishes.

Parish.	Population Census 1891.	Total Deaths.	Death-rate.	Births.	Deaths under 1 year.	Infantile Death-rate.
All Saints	1809	54	29·8	59	12	203
St. Andrew......	1175	30	25·5	41	8	195
St. Swithin......	558	6	10·7	12	1	83
Blockhouse ...	2202	70	31·3	97	21	216
St. Helen	945	28	29·6	28	3	107
St. Michael......	444	10	22.5	7	3	428
St. Alban	153	4	26·1	6	...	...
College Precincts ...	129	1	...	...	...	...
Whistones	1800	62	34·4	65	12	184
St. Nicholas ...	2862	29	10·1	34	4	117
St. John	4579	77	16·8	130	22	169
St. Clement ...	2107	45	21·3	72	10	138
South Hallow...	486	7	14·4	11	1	90
St. Martin	4665	86	18·2	146	27	185
St. Peter	7880	135	17·1	238	48	201
South Claines .	11,085	185	16·6	297	30	101
Worcester ...	**43,480**	**836**	**19·2**	**1244**	**207**	**166**

TABLE IV.

ANALYSIS OF DEATHS OCCURRING IN PARISHES.

Parish.	Male.	Female.	Total.	Age.			
				Under 1 year.	1—5 years.	5—65 years.	Over 65 years.
All Saints	31	23	54	12	8	22	12
St. Andrew	18	12	30	8	2	12	8
St. Swithin.........	5	1	6	1	...	3	2
Blockhouse	32	38	70	22	13	27	8
St. Helen	15	13	28	3	1	14	10
St. Michael	5	5	10	3	...	6	1
St. Alban	2	2	4	...	...	4	...
College Precincts	1	...	1	...	...	1	...
Whistones	31	31	62	12	2	21	27
St. Nicholas	15	14	29	5	...	14	10
St. John	39	38	77	23	2	31	21
St. Clement	24	21	45	11	10	12	12
South Hallow ...	2	5	7	1	...	3	3
St. Martin	47	39	86	28	8	31	19
St. Peter	68	67	135	49	11	49	26
South Claines ...	78	107	185	31	22	84	48

TABLE V.

Birth-Rate and Death-Rates of 1893, compared with the Rates of the preceding Seven Years.

Year.	Population.	Natural Increase	Registered Births.	Birth Rate.	Total Deaths.	Death Rate.	Deaths under 1 year.	Infantile Death Rate.	Deaths under 5 years.	Deaths from the seven principal Zymotics	Zymotic Death Rate.
1886	41,710	416	1356	30	940	22·4	293	217	357	79	1·8
1887	41,965	452	1378	32	926	22·6	273	196	359	77	1·8
1888	42,220	515	1321	31·3	806	18·9	224	169·5	317	93	2·3
1889	42,462	565	1332	31·5	767	18·1	218	163	64	46	1·3
1890	42,715	378	1256	29·4	878	20·6	225	179	281	59	1·4
1891	42,950	341	1273	29·6	932	21·6	269	208	397	124	2·8
1892	43,195	293	1267	29·3	974	22·5	209	164	277	57	1·3
	Average of preceding 7 years...	423	1312	30·4	889	20·9	244·4	185	321	76·4	1·8
1893	**43,480**	**408**	**1244**	**28·6**	**836**	**19·2**	**207**	**166**	**285**	**92**	**2·1**

TABLE VI.

Deaths from the Seven Principal Zymotic Diseases in 1893, compared with the preceding Seven Years.

Year.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	FEVER.			Diarrhœa.	Total.
						Typhus.	Typhoid.	Continued.		
1886	...	6	9	2	11	...	15	...	37	79
1887	...	19	1	3	13	...	8	...	33	77
1888	...	30	7	3	11	...	5	...	37	93
1889	...	...	2	3	1	...	7	...	33	46
1890	...	2	4	2	5	...	10	...	36	59
1891	...	32	...	2	60	1	8	...	21	124
1892	...	1	2	11	5	...	14	1	23	57
Average of the preceding 7 years ...	...	12·8	3·5	3·7	15·1	...	9·5	...	31·4	76·4
1893	**1**	**19**	**4**	**9**	**6**	...	**9**	...	**44**	**92**

TABLE OF DEATHS REGISTERED DURING THE YEAR 1893, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

These Tables are made at the request of the Local Government Board, on Forms supplied by them.

Names of Localities.	Mortality from all Causes, at subjoined Ages.								Mortality from subjoined Causes, distinguishing Deaths of Children under Five Years of Age.																					
													Fevers.																	
	At all Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.		Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Measles.	Whooping Cough.	Diarrhœa & Dysentery.	Rheumatic Fever.	Ague.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	Total.
City of Worcester ………	732	202	70	35	23	223	179	Under 5		3	6			2						16	5	43	1			27		6	163	272
								5 upwds.			3			5			6		1	3		1	6	1	47	70	72	6	239	460
Workhouse………………	52	4	1	…	…	21	26	Under 5																		2			3	5
								5 upwds.																		6	1		40	47
General Infirmary………	51	2	6	9	3	28	3	Under 5													1					2		2	3	8
								5 upwds.						1									1		2	4	3	8	24	43
Barbourne Hospital ……	3	…	1	…	…	1	1	Under 5		1																				1
								5 upwds.	1					1																2
Totals……	838	208	78	44	26	273	209	Under 5		4	6			2						16	6	43	1			31		8	169	286
								5 upwds.	1		3			7			6		1	3		1	7	1	49	80	76	14	303	552
The subjoined numbers have also to be taken into account in judging of the above records of mortality.																														
Deaths occurring outside the district among persons belonging thereto ………	11					7	4	Under 5																						
								5 upwds.																			3		8	11
Deaths occurring within the district among persons not belonging thereto ………	13	1		1	1	6	4	Under 5																					1	1
								5 upwds.																	2	1	1	2	6	12

TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

These Tables are made at the request of the Local Government Board, on forms supplied by them.

Names of Localities.	Population at All Ages.		Registered Births.	Aged under 5 or over 5.	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health.											Number of such cases removed from their homes in the several localities for treatment in Isolation Hospital.				
									Fevers.											
	Census 1891.	Estimated to middle of 1893.			Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Smallpox.	Scarlatina.	Diphtheria.	Enteric or Typhoid.	Measles.
City of Worcester …………	42,908	43,480	1,244	Under 5		272	38			63	1		9		78	11	25		8	1
				5 upwds.	12												118			
General Infirmary …………				Under 5						1					16					
				5 upwds.		1	1			1										
Workhouse…………………				Under 5																
				5 upwds.	1															
Totals ………………				Under 5		273	39			65	1		9		94	11	25		8	1
				5 upwds.	13												118			

METEOROLOGICAL RETURNS FOR THE YEAR 1893. (MEANS).

Observations taken at 9 a.m. every Morning at Fort Royal, Worcester, with Kew verified Instruments; 135 feet above mean Sea level; Rain Guage 5 inches diameter, raised 5 feet above the ground.

Month, 1893.	Barometer in Inches.	Extreme Temperature in Shade.		Rainfall in Inches.	Days of Rain.
		Maximum.	Minimum.		
January	29·93	42	31	1·378	12
February......	29·56	48	36	1·712	18
March.........	30·05	60	35	·127	2
April	30·08	65	39	·161	3
May	29·96	58	46	2·161	8
June	29·95	72	52	·893	9
July............	29·79	73	55	1·815	14
August	29·94	76	55	1·974	11
September ...	29·70	70	46	·968	10
October	29·78	61	43	1·457	13
November ...	29.88	49	35	1·093	10
December ...	29·84	48	35	2·161	12
Mean for the Year	29·87	60·1	42·3		
Total for the Year				15·900	122

OBSERVATIONS.

The year was remarkable for the great amount of Sunlight, and the small amount of Rain, being nearly 10 inches below the average. The summer was almost uninterrupted from April till nearly the end of September. The Temperature rose in the month of April to a maximum of 80 on the 20th and 21st, with a night maximum of 53. In the month of May to a maximum of 80 on the 5th and the 8th, during these two months there was neither rain nor thunder. In the month of June the highest temperature was 87, with a night temperature of 58 on the 19th. On the 14th and 15th there was thunder with slight rain. In July the highest temperature was 86 on the 7th, with a night maximum of 64; Rain occurred on the 4th, 8th, and 9th, the two latter days being accompanied with thunder. In August, temperature was on the 19th 88, the highest of the year, the night maximum being 64, thunder and rain occurred on the 9th and 10th, the rainfall on the 10th being over three-quarters of an inch. There was also rain on the 11th and 19th.

The amount of sunlight of the year was very remarkable, there being full sunlight for 87 days, and for part of the day only for 186 days, making the large amount of 273 days in which the sun shone for some part of the day.

H. SWETE, M.D., D.P.H.

Report of the Sanitary Inspector for the Year 1893.

TO THE URBAN SANITARY AUTHORITY OF THE CITY OF WORCESTER.

Gentlemen,

I have the honor to submit my Report on the work done in this department during the year. I have, as in past years, to acknowledge the great assistance rendered to me by the Health Committee in the discharge of my duties; also, my sincere thanks are due to the Town Clerk for the valuable advice which he is always ready to give me.

The outbreaks of Smallpox during the year were a source of great anxiety, but happily, owing to the energetic measures taken, the spread of the disease was checked.

I shall endeavour to describe briefly the work which has been carried out during the year.

Filthy or Dilapidated Dwellings.—Two hundred and forty-five of these have been dealt with during the year. Great attention is paid to this class of nuisance, and periodical house-to-house inspections are made in the parts of the City where this class of dwellings is mostly found. Even with these periodic inspections, the same state of things is found each time, and I must confess that it is very discouraging to find houses that have been completely renovated three months previously, in quite as bad a state as they were before. Much of this is owing to the want of cleanliness in the tenants and also to much of the property being old and difficult to keep in repair.

Overcrowded Dwellings.—Seventy-seven of these have been found and measures at once taken to abate the nuisance. I find very great difficulty in dealing with these cases, owing to the scarcity of small houses.

Foul or Defective Drains.—Two hundred of these have been discovered and the necessary work carried out. Constant supervision has to be given to this class of nuisance, especially in the poorer and older parts of the City.

Drains inside Dwellings.—When I came into office 12 years ago, I found the majority of houses had drains inside, principally those connected with the kitchen sinks. These have now been, to a great extent, done away with, and very few remain.

Privy Cess-pits.—About 200 of these are still to be found in the City. Something like 1,000 have been converted into W.Cs. in the last 12 years. During 1893, 39 have been made into W.Cs.

Ash Pits.—These are emptied by the Streets Superintendent's men in the day-time, with the exception of those where the offensive nature of the contents would cause a nuisance: these my men do at night. They are decreasing rapidly, and where I can I persuade the tenants to have dust-bins, which can be emptied every week.

Dilapidated Privies and W.C.s.—Two hundred and forty-nine have been found and reported as defective, either owing to broken pans or water supply defective.

Accumulations of Manure, &c.—Very few complaints of such nuisances have been made to us. Instructions have been given me by the Health Committee to take proceedings in any future cases which may arise.

Miscellaneous Nuisances.—Sixty-nine nuisances under this head have been dealt with, comprising swine kept in a bad state, defective spouting, animals kept in dwellings, and other varieties of nuisances which cannot be placed under other heads.

Notification of Infectious Diseases.—Four hundred and ninety-four cases of infectious diseases have been notified during the year. 300 houses or rooms have been disinfected by your officers. In cases where the patient remains isolated at home the room occupied has been stripped as to the walls and re-papered and the ceilings whitewashed.

Food and Drugs Act.—Fifty-four samples of food and water have been submitted: 16 of milk, 1 lard, 13 of butter, 1 coffee, 4 pepper, 1 rice, 2 vinegar, 1 gin, 1 arrowroot, 14 well water, 1 pork. Four samples of food were adulterated and the sellers were fined in each case.

Courts, Yards, and Alleys.—The paving of these still proceeds, and there are now few courts in the City which are not paved, and many of the large courts are lighted with gas.

Canal Boats.—There are 150 on the register, and inspection of them are periodically made. During the year seven new boats have been registered. The boats are found generally clean and free from overcrowding. A case of Smallpox occurred on a boat and was removed to the Isolation Hospital. The contents of the cabin were burnt, and the interior repainted after being disinfected.

Slaughter-houses.—There are 35 on the register. They are inspected weekly. I have invariably found them kept clean, and they are whitewashed four times yearly.

Milkshops and Dairies.—There are 103 licensed in the City Periodical inspections are made and the places where milk is stored are invariably kept clean.

Common Lodging Houses.—There are 11 of these registered in the City. They are inspected every week, and the whole of the inside of each is whitewashed twice yearly. When Smallpox occurred the lodging house keepers rendered to your officers every assistance in their power.

During the year 1,237 nuisances have been dealt with; 587 written notices have been served for their abatement, and nearly 6,500 visits have been paid by myself and your Assistant Inspector.

I have to acknowledge the ready assistance always rendered by Mr. Sheppard, your Assistant Inspector, more especially in the work of house-to-house visitation.

I am, Gentlemen,
Your obedient Servant,
W. PACY.

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